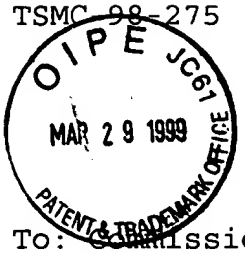
GP 2812

TSMC 98-275



March 26, 1999

To: Commissioner of Patents and Trademarks
Washington, D.C. 20231

Fr: George O. Saile, Reg. No. 19,572
20 McIntosh Drive
Poughkeepsie, N.Y. 12603

Subject: Serial No. 09/249,254 02/12/99

Y.S. Ho, J.Y. Chung, C.H. Chen, H.J. Tao

METHOD OF MAKING A METAL-INSULATOR-METAL CAPACITOR IN THE CMOS PROCESS

Grp. Art Unit: 2812

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation In An Application.

The following Patents and/or Publications are submitted to comply with the duty of disclosure under CFR 1.97-1.99 and 37 CFR 1.56. Copies of each document is included herewith.

U.S. Patent 5,037,772 to McDonald, "Method for Forming a Polysilicon to Polysilicon Capacitor", describes a method where a first polysilicon layer is initially deposited onto a layer of field oxide. A dielectric is formed and then a second polysilicon layer is deposited.

U.S. Patent 4,697,330 to Paterson et al, "Floating Gate Memory Process with Improved Dielectric", describes a method where the dielectric between the floating gate and the control gate, in an EEPROM or other floating gate memory is made by forming an oxide/nitride stack over the (first polysilicon) control gate.

U.S. Patent 5,338,701 to Hsu et al., "Method for Fabrication of W-Polycide-To-Poly Capacitors with High Linearity", describes a method of forming a polycide-to-polysilicon capacitor simultaneously with a CMOS device with polycide gate.

U.S. Patent 5,589,416 to Chittipeddi, "Process for Forming Integrated Capacitors", teaches fabrication of a metal-oxide-polysilicon capacitor.

U.S. Patent 5,554,558 to Hsu et al., "Method of Making High Precision W-Polycide-To-Poly Capacitors in Digital/Analog Process", discloses a very high integrity capacitor dielectric in a polysilicon to polysilicon or polysilicon to metal capacitor.

The following seven U.S. Patents disclose various methods of forming metal-insulator-metal capacitors:

1. U.S. Patent 5,576,240 to Radosevich et al., "Method for Making a Metal to Metal Capacitor".
2. U.S. Patent 5,654,581 to Radosevich et al., "Integrated Circuit Capacitor".
3. U.S. Patent 5,479,316 to Smrtic et al., "Integrated Circuit Metal-Oxide-Metal Capacitor and Method of Making Same".
4. U.S. Patent 5,708,559 to Brabazon et al., "Precision Analog Metal-Metal Capacitor".
5. U.S. Patent 5,406,447 to Miyazaki, "Capacitor Used in an Integrated Circuit and Comprising Opposing Electrodes Having Barrier Metal Films in Contact with a Dielectric Film".
6. U.S. Patent 5,741,721 to Stevens, "Method of Forming Capacitors and Interconnect Lines".
7. U.S. Patent 4,971,924 to Tigelaar et al., "Metal Plate Capacitor and Method for Making the Same".

Sincerely,

Stephen B. Ackerman,
Reg. No. 37661

Form PTO-1449

INFORMATION DISCLOSURE CITATION IN AN APPLICATION

(Use several sheets if necessary)

OIPE JC61 MAR 2 8 1999 PATENT & TRADEMARK OFFICE

Docket Number (Optional)	Application Number
TSMC-98-275	09/249,254
Applicant: Y. S. Ho et al.	
Filing Date: 02/12/99	Group Art Unit: 2812

U. S. PATENT DOCUMENTS

	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	5037772	8/6/91	McDonald	437	52	12/13/89
	4697330	10/6/87	Paterson et al.	437	42	5/27/86
	5338701	8/16/94	Hsu et al.	437	60	11/3/93
	5589416	12/31/96	Chittipeddi	437	60	12/6/95
	5554558	9/10/96	Hsu et al.	437	60	2/13/95
	5576240	11/19/96	Radosevich et al.	437	60	12/9/94
	5654581	8/5/97	Radosevich et al.	257	534	6/6/95
	5479316	12/26/95	Smrtic et al.	361	322	8/24/93
	5708559	1/13/98	Brabazon et al.	361	313	10/27/95
	5406447	4/11/95	Miyazaki	301	313	12/29/92
	5741721	4/21/98	Stevens	437	60	4/12/96

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation YES	Translation NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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EXAMINER	DATE CONSIDERED

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Form-PTO-1449

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(Use several sheets if necessary)

Docket Number (Optional)	Application Number
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U. S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	4971924	11/20/90	Tigelaar et al.	437	60	12/9/88

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation YES	Translation NO

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